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2.3. Which words do you associate with synthetic biology? (Give minimum 3 words.)

2.4. Do you approve synthetic biology in general? (Choose only one answer.)

- ☐ Yes  
☐ No  
☐ Neutral

2.5. How do you evaluate the benefit-disadvantage ratio of synthetic biology in general? (Choose only one answer.)

- ☐ The benefits exceed the disadvantages.  
☐ The benefits and disadvantages are balanced.  
☐ The disadvantages exceed the advantages.  
☐ No opinion

### 3. Applications

3.1. The production of insulin for diabetes patients and artemisinin (medicine for malaria) are two examples of health care application of synthetic biology. What is your opinion about these pharmaceutical applications?

Negative development ☐ ☐ ☐ ☐ ☐ Positive development

3.2. Crops can be genetically modified using synthetic biology which makes them more resistant to diseases, gives them a higher nutritional value, lengthens their expiration date, etc. What is your opinion about the applications of synthetic biology in the agriculture and food industry?

Negative development ☐ ☐ ☐ ☐ ☐ Positive development

3.3. Synthetic biology can develop customized bacteria that are able to produce biofuels. What is your opinion about the applications of synthetic biology energy sector?

Negative development ☐ ☐ ☐ ☐ ☐ Positive development

3.4. Synthetic biology allows to design genetically modified micro-organisms that can be released in nature to locate and break down toxic and polluting substances. What is your opinion about the applications of synthetic biology for environmental technology uses?

Negative development ☐ ☐ ☐ ☐ ☐ Positive development

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### Short description of synthetic biology

Synthetic biology is a recent field in science where new living organisms – like bacteria – are designed using engineering principles. These new biological systems are performing functions that can't be found in nature. Therefore bacteria are programmed as a kind of 'mini-computers' with the help of external added genetical information in order to obtain a new characteristic. Next to the applications mentioned above, there are many other possible uses in the domain of biosensors, environment protection, vaccines, etc.

Synthetic biology also contains a number of potential risks. If modified organisms are released in nature, they could possibly damage it. Scientists are minimizing the risks by building in mechanisms to prevent released organisms of surviving in nature. Others are more concerned about the misuse of synthetic biology principles to make biological weapons. The necessary regulation and safety regulations should be in place and respected.

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After this short description we ask you again to give your opinion on synthetic biology.

3.5. Do you approve synthetic biology in general? (Choose only one answer.)

- ☐ Yes
- ☐ No
- ☐ Neutral

3.6. How do you evaluate the benefit-disadvantage ratio of synthetic biology in general? (Choose only one answer.)

- ☐ The benefits exceed the disadvantages.
- ☐ The benefits and disadvantages are balanced.
- ☐ The disadvantages exceed the advantages.
- ☐ No opinion

### 4. Statements

4.1. The formation of patterns in nature (ex. Stripe patters of zebra-fish) can only be understood if these can be created artificially.

Disapprove      ☐      ☐      ☐      ☐      ☐      Approve

4.2. Synthetic biology can have a positive impact on the environment.

Disapprove      ☐      ☐      ☐      ☐      ☐      Approve

4.3. Synthetic biology can have a positive impact on your life.

Disapprove      ☐      ☐      ☐      ☐      ☐      Approve

4.4. DNA can be patented\*. (\*the exclusive right to produce/sell)

Disapprove      ☐      ☐      ☐      ☐      ☐      Approve

4.5. The synthetic biology companies and scientists can be trusted that they respect the necessary safety conditions and that they take their responsibility concerning their experiments.

Disapprove

☐☐☐☐☐

Approve

## 5. The future of synthetic biology

5.1. What are the aspects of synthetic biology that you want to know more about?

5.2. How can the public trust in synthetic biology be increased?

The KU Leuven iGEM team thanks you for your participation.